

Title (en)  
CATHODE ACTIVE MATERIAL FOR LITHIUM SECONDARY BATTERY

Title (de)  
AKTIVES KATHODENMATERIAL FÜR LITHIUM-SEKUNDÄRBATTERIE

Title (fr)  
MATÉRIAU CATHODIQUE ACTIF POUR BATTERIE SECONDAIRE AU LITHIUM

Publication  
**EP 2418718 A2 20120215 (EN)**

Application  
**EP 10761898 A 20100409**

Priority  
• KR 2010002202 W 20100409  
• KR 20090031032 A 20090409

Abstract (en)  
Provided is a cathode active material which is lithium transition metal oxide having an  $\pm$ -NaFeO 2 layered crystal structure, wherein the transition metal is a blend of Ni and Mn, an average oxidation number of the transition metals except lithium is +3 or higher, and lithium transition metal oxide satisfies the Equation  $m(\text{Ni}) \neq m(\text{Mn})$  (in which  $m(\text{Ni})$  and  $m(\text{Mn})$  represent a molar number of manganese and nickel, respectively). The lithium transition metal oxide has a uniform and stable layered structure through control of oxidation number of transition metals to a level higher than +3, thus advantageously exerting improved overall electrochemical properties including electric capacity, in particular, superior high-rate charge/discharge characteristics.

IPC 8 full level  
**H01M 4/505** (2010.01); **H01M 4/525** (2010.01)

CPC (source: EP KR US)  
**B60L 50/50** (2019.02 - KR); **C01G 53/04** (2013.01 - EP US); **H01M 4/505** (2013.01 - EP KR US); **H01M 4/525** (2013.01 - EP KR US); **H01M 10/0525** (2013.01 - KR); **C01P 2002/72** (2013.01 - EP US); **C01P 2006/40** (2013.01 - EP US); **Y02E 60/10** (2013.01 - EP)

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)  
**US 2011140036 A1 20110616**; **US 8277980 B2 20121002**; CN 102379053 A 20120314; CN 102379053 B 20160629; EP 2418718 A2 20120215; EP 2418718 A4 20140101; KR 101059755 B1 20110826; KR 20100112539 A 20101019; WO 2010117237 A2 20101014; WO 2010117237 A3 20110120; WO 2010117237 A9 20110310

DOCDB simple family (application)  
**US 83351810 A 20100709**; CN 201080014803 A 20100409; EP 10761898 A 20100409; KR 2010002202 W 20100409; KR 20100032732 A 20100409